

VOLAROVICH, M.P.; BALASHOV, D.B.

Speed and absorption of ultrasound in nitrogen at pressures
up to 5000 kg./cm². Prim. ul'traakust. k issl. veshch. no.13:
63-77 '61.
(MIRA 16:6)

(Nitrogen--Acoustic properties)
(Ultrasonic waves--Speed)

VOLAROVICH, M.P.

PHASE I BOOK EXPLOITATION

SOV/5590

Konferentsiya po poverkhnostnym silam. Moscow, 1960.

Issledovaniya v oblasti poverkhnostnykh sil; sbornik dokladov na konferentsii po poverkhnostnym silam, aprel' 1960 g. (Studies in the Field of Surface Forces; Collection of Reports of the Conference on Surface Forces, Held in April 1960) Moscow, Izd-vo AN SSSR, 1961. 231 p. Errata printed on the inside of back cover. 2500 copies printed.

Sponsoring Agency: Institut fizicheskoy khimii Akademii nauk SSSR.

Resp. Ed.: B. V. Daryagin, Corresponding Member, Academy of Sciences USSR; Editorial Board: N. N. Zakhavayeva, N. A. Krotova, M. M. Kusakov, S. V. Nerpin, P. S. Prokhorov, M. V. Talayev and G. I. Fuks; Ed. of Publishing House: A. L. Bankvitser; Tech. Ed.: Yu. V. Rylina.

PURPOSE: This book is intended for physical chemists.

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42
Studies in the Field of Surface Forces (Cont.)

SOV/5550

COVERAGE: This is a collection of 25 articles in physical chemistry on problems of surface phenomena investigated at or in association with the Laboratory of Surface Phenomena of the Institute of Physical Chemistry of the Academy of Sciences USSR. The first article provides a detailed chronological account of the Laboratory's work from the day of its establishment in 1935 to the present time. The remaining articles discuss general surface force problems, polymer adhesion, surface forces in thin liquid layers, surface phenomena in dispersed systems, and surface forces in aerosols. Names of scientists who have been or are now associated with the Laboratory of Surface Phenomena are listed with references to their past and present associations. Each article is accompanied by references.

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KRUZHMAN, Georgiy Iosifovich; VOLAROVICH, M.P., prof., doktor fiz.-mat.nauk, red.; KOLOTUSHKIN, V.I., red.; LARIONOV, G.Ye., tekhn. red.

[Theoretical principles of the production of granulated peat fuel to be used as a source of power, gas, and chemicals]
Teoreticheskie osnovy i protsess polucheniia melkokuskovogo torfianogo topliva dlia energogazokhimicheskogo ispol'zovaniia.
Pod red. M.P.Volarovich. Moskva, Gos.energ.izd-vo, 1961. 303 p.
(MIRA 15:1)

(Peat)

VOLAROVICH, M. P.

"Vaporization of heat- and mass-transfer in peat with the aid of radioactive tracers."

Report presented at the 1st All-Union Conference on Heat- and Mass- Exchange,
Minsk, BSSR, 5-9 June 1961

VOLAROVICH, M. P., CHURAEV, N. V., and GAMAYUNOV, N. I.

"Investigation of Heat and Mass Transfer in Peat by
Radioactive Indicators."

Report submitted for the Conference on Heat and Mass
Transfer, Minsk, BSSR, June 1961.

VOLAROVICH, M.P.

Studying the physicomechanical properties of rocks under high pressures.
Geol. i geofiz. no.4:13-21 '61. (MIRA 14:5)

1. Institut fiziki Zemli, Moskva.
(Rocks--Testing)

VOLAROVICH, M.P.; TARASOV, O.A.; BONDARENKO, A.T.

Investigating the dielectric permeability of rock samples at unilateral and isostatic (up to 5000 kg/cm²) atmospheric pressures.
Izv. AN. SSSR. Ser. geofiz. no.7:1004-1008 Jl '61. (MIRA 14:6)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Rocks—Electric properties)

S/081/62/000/008/007/057
B166/B101

AUTHORS: Volarovich, M. P., Balashov, D. B.

TITLE: Study of the velocity and absorption of ultrasound in nitrogen at pressures up to 5000 kg/cm².

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1962, 39, abstract 8B265 (Sb. "Primeneniye ul'traakust. k issled. veshchestva". M., no. 13, 1961, 63-77)

TEXT: The pulse method was used to study the velocity and absorption of ultrasound in N₂ at frequencies of 160 and 310 kc/s at 20°C and pressures up to 5000 kg/cm². The technique has been described before (RZhKhim, 1960, no. 14, 56125). The accuracy of the measurements is 2 %. When the pressure is increased from 1 to 5000 kg/cm² the velocity of ultrasound increases ~5 times. Good agreement was obtained with other measurements (RZhKhim, 1955, no. 6, 9161) and computations (Benedict M., J. Amer. Chem. Soc., 1937, 59, no. 11, 2223, 2224). The velocities of ultrasound are

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Study of the velocity and...

S/081/62/000/008/007/057
B166/B101

also computed on the basis of the equation of state suggested earlier (RZhKhim, 1956, no. 3, 6283). The results agree with the observations only at pressures up to 1000 kg/cm^2 ; at 5000 kg/cm^2 the discrepancy amounts to $\sim 40\%$. The experimental data and literature data are used to calculate the ratios of the specific heats at constant pressure and volume. With change in pressure from 1 to 5000 kg/cm^2 the damping coefficient decreases by ~ 5600 times. For pressures up to 1000 kg/cm^2 the damping coefficient is found from the Kirchhoff-Stokes formula; it is extremely close to that observed. [Abstracter's note: Complete translation.]

Card 2/2

VOLAROVICH, M.P.; LISHTVAN, I.I.; CHURAYEV, N.V.

Comparative study of mechanical and chemical methods changing
peat dispersity [with summary in English]. Koll.zhur. 23 no.4:
399-403 Jl-Ag '61. (MIRA 14:8)

1. Kalininskiy torfyanoy institut.
(Peat) (Sedimentation analysis)

VOLAROVICH, M.P., IL'IN, N.I.; CHURAYEV, N.V.

Radioactive-tracer techniques used in determining the water
flow rate in porous media. Koll. zhur. 23 no. 5: 524-527 S-0
'61. (MIRA 14:9)

1. Kalininskiy torfyanoy institut.
(Hydraulics) (Porous materials)

VOLAROVICH, M.P., doktor fiz.-matem.nauk, prof.; IL'IN, N.I., inzh.;
CHURAYEV, N.V., kand.tekhn.nauk, dotsent

Processes of water movement in draining upper deposits. Torf.
prom. 38 no.7:9-13 '61. (MIRA 14:12)

1. Kalinskiy torfyanoy institut.
(Peat bogs)
(Radioisotopes--Industrial applications)

VOLAROVICH, M.P.; GALDIN, N.Ye.; GUSEV, K.F.

Geological, mineralogical, and X-ray study of quartz tectonites.
Zap.Vses.min.ob-va 90 no.6:660-672 '61. (MIRA 15:2)

1. Institut fiziki Zemli AN SSSR, Moskva.
(Quartz) (Tectonite)

VOLAROVICH, M.F.; GALDIN, N.Ye.

Mechanism of the deformation and orientation of quartz in tectonites.
Dokl. AN SSSR 140 no.6:1304-1306 O '61. (MIRA 14:11)

1. Institut fiziki Zemli AN SSSR. Predstavлено академиком A.V.
Shubnikovym. (Quartz crystals)

VOLAROVICH, M. P.; CHURAYEV, N. V.

"Research on the Hydrophysical Characteristics of Peat and on
the Processes involved in the Movement of Moisture in Peaty soils"
To be presented at the Symposium on the Use of Radioisotopes in
Soil-Plant Nutrition Studies, Bombay, 26 February - 2 March 1962.

Kalinin Peat Institute, USSR

VOLAROVICH, M.P., prof.; BAGROV, A.A., kand.tekhn.nauk

Change of the viscoplastic parameters of peat in processing. Izv.
vys.ucheb.zav.; gor.zhur. 5 no.2:64-69 '62. (MIRA 15:4)

1. Kalininskiy torfyanoy institut. Rekomendovana kafedroy fiziki.
(Peat)

VOLAROVICH, M.P.; LISHTVAN, I.I.; NAUMOVICH, V.M.

Structural and rheological properties of disperse and highmolecular
systems. Inzh.-fiz. zhur. 5 no.2:122-132 F '62. (MIRA 15:1)

1. Kalininskiy torfyanoy institut, Moskva.
(Rheology) (Deformations (Mechanics))

VOLAROVICH, M.P.; SOBOLEV, G.A.; PARKHOMENKO, E.I.

Piezoelectric effect of pegmatite and quartz veins. Izv. AN
SSSR. Ser. geofiz. no.2:145-152 F '62. (MIRA 15:2)

1. AN SSSR, Institut fiziki Zemli.
(Piezoelectricity)
(Quartz)
(Pegmatites)

VOLAROVICH, M.P., prof.

Seminar on the physical characteristics of rocks under high
pressure. Vest.AN SSSR 32 no.8:117-120 Ag '62. (MIRA 15:8)
(High pressure research) (Rocks--Testing)

VOLAROVICH, M.P.; GUTKIN, A.M.

Calculating ultimate shearing stress in suspensions with
particles having a rigid dipole moment. Dokl. AN SSSR 143
no.4:896-897 Ap '62. (MIRA 15:3)

1. Kalininskiy torfyanoy institut. Predstavлено akademikom
P.A.Rebinderom.
(Colloids--Dipole moments) (Strains and stresses)

VOLAROVICH, M.P.; LISHTVAN, I.I.; CHURAYEV, N.V.

Immobilization of a dispersion medium under the influence of
structure-forming additions. Dokl. AN SSSR 143 no.5:1135-1138
Ap '62. (MIRA 15:4)

1. Kalininskiy torfyanyi institut. Predstavлено академиком
P.A.Rebinderom.
(Disperse systems)

VOLAROVICH, M.P.

Study of the elastic properties of rocks under high confined
pressures. Trudy Inst. fiz. Zem. no.23:7-18 '62.
(MIRA 16:11)

VOLAROVICH, M.P.; FAN VEY-TSIN [Fang Wei-ch'ing]

Study of the elastic properties of rocks by the statistic and
dynamic methods under high confined pressures. Trudy Inst. fiz.
(MIRA 16:11)
Zem. no.23:19-24 '62.

VOLAROVICH, M.P.; TOMASHEVSKAYA, I.S.

New method for determining the resistance of rocks to shear.
Trudy Inst. fiz. Zem. no.23:43-49 '62. (MIRA 16:11)

VOLAROVICH, M.P.; BONDARENKO, A.T.; GUSEV, K.F.

X-ray investigations of rock samples at high pressures and
temperatures. Trudy Inst. fiz. Zem. no.23:55-59 '62.
(MIRA 16:11)

VOLAROVICH, M.P.; GALDIN, N.Ye.; GUSEV, K.F.

X-ray study of quartz deformations in tectonites. Trudy Inst.
(MIRA 16:11)
fiz. Zem. no.23:60-79 '62.

VOLAROVICH, M.P.; BONDARENKO, A.T.; PARKHOMENKO, E.I.

Effect of pressure on the electric properties of rocks. Trudy
(MIRA 16:11)
Inst. fiz. Zem. no.23:80-90 '62.

S/169/63/000/003/035/042
D263/D307

AUTHOR:

Volarovich, M.P.

TITLE:

Studies of the physico-mechanical properties of mountain rocks at high pressures

PERIODICAL:

Referativnyy zhurnal, Geofizika, no. 3, 1963, 7,
abstract 3G34 (In collection: Eksperim. issled. v
obl. glubinnykh protsessov, M., AN SSSR, 1962,
22-33)

TEXT: Mountain rocks within the Earth are not infrequently subjected to the action of movement stresses. It is therefore of interest to measure directly the shear modulus of such rocks at high pressures. A special method was evolved for this purpose, to test mountain rocks for distortion. Samples in the shape of square end rods, were placed inside the high pressure chamber and were then subjected to distortion. As a result the author constructed graphs showing the dependence of the shear modulus G on the surrounding pressure (up to 3000 kg/cm²). A method was developed for the deter-

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S/169/63/000/003/035/042
D263/D307

Studies of the physico-mechanical ...

mination of all elastic parameters during one experiment, consisting of the measurement (by an impulse ultrasonic method) of the propagation velocity of elastic waves in a limitless medium (in the massif), V_{pm} , and of the propagation velocity of elastic waves in a thin rod, V_{pcm} . The measurements were carried out on specimens 3 cm in diameter and 10-30 cm long. From the two quantities measured, taking densities of the mountain rocks into account, the author calculated all the remaining elastic parameters by means of the usual equations of the theory of elasticity, i.e. velocity of transverse waves V_s , Young's modulus E , shear modulus G , compression coefficient and Poisson's coefficient. The graphs given show that at fairly low surrounding pressures (500-1000 kg/cm²) the velocity of longitudinal waves is sharply increased. On further increase of pressure, this velocity increase is reduced. Z.I. Stakhovskaya carried out experiments on the determination of the resistance of mountain rocks to flexure, at surrounding pressures of up to 3000 kg/cm² finding that the resistance rapidly increases with increasing pressure. Studies of the viscoelastic properties of mountain rocks is of major interest; experimental methods for the study of these properties are

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Studies of the physico-mechanical ...

S/169/63/000/003/035/042
D263/D307

distinguished by great complexity. Viscoelastic properties of these rocks may to some extent be characterized by the damping coefficients of elastic waves. A corresponding method was described; the experimental data show that the absorption coefficient α rapidly increases with frequency, and decreases with increasing pressure: particularly sharp changes occur in the pressure range 1000-1500 kg/cm². Further plans must include a development of combined systematic study of the elastic, strength and rheological properties of mountain rocks at high temperatures and pressures.

Abstracter's note: Complete translation

Card 3/3

VOLAROVICH, M.P., doktor fiziko-matematicheskikh nauk; GAMAYUNOV, N.I.,
kand. tekhn. nauk; CHURAYEV, N.V., kand. tekhn. nauk

Using radioactive indicators for studying the moisture
characteristics, structure, and moisture movement in peat.
Trudy VNIIGiM 38:97-115 '62. (MIRA 16:7)

1. Kalininskiy torfyanoy institut.
(Peat--Testing) (Radioactive tracers)

VOLAROVICH, M.P., doktor fiziko-matem. nauk; IL'IN, N.I., inzh.;
CHURAYEV, N.V., kand. tekhn. nauk

Investigating water translocation in peat layers by the method
of radioactive tracers. Trudy VNIIGiM 38:116-131 '62.
(MIRA 16:7)

1. Kalininskiy torfyanoy institut.
(Radioactive tracers) (Peat) (Moisture)

VOLAROVICH, M.P., doktor tekhn.nauk; KOVALEVSKIY, Ye.P., inzh.

Testing the elastic parameters of peat briquets by the pulse ultrasonic method. Torf. prom. 39 no.8:14-16 '62. (MIRA 16:1)

1. Kalininckiy torfyany institut.
(Peat) (Briquets (Fuel)) (Ultrasonic testing)

VOLAROVICH, M. P.; CHURAYEV, N. V.

"The modern condition and methods of physics and physical chemistry
of peat."

Report submitted for the 2nd International Peat Congress, Leningrad,
15-22 Aug 63.

VOLAROVICH, M.P.; CHURAYEV, N.V.

Determining the moisture content of peat by the neutron method
discussed by N.I.Skvortsova and IA.E.Chudars. Inzh.-fiz.zhur.
6 no.3:124-126 Mr '63. (MIRA 16:4)

1. Torfyanoy institut, g. Kalinin.
(Peat—Testing) (Neutrons)
(Skvortsova, N.I.) (Chudars, IA.E.)

L 14958-63

EWP(k)/EWP(q)/EWT(m)/BDS AFFTC/ASD Pf-4 JD/HW

ACCESSION NR: AP3005588

S/0049/63/000/003/1198/1205

63

61

AUTH'R: Volarovich, M. P.; Balashov, D. B.; Tomashevskaya, I. S.; Pavlogradskiy, V. A.TITLE: Study of the effect of uniaxial compression on elastic wave velocities in rock samples under high hydrostatic pressure

SOURCE: AN SSSR. Izv. Ser. geofizicheskaya, no. 8, 1963, 1198-1205

TOPIC TAGS: uniaxial compression, elastic-wave velocity, hydrostatic pressure, rock deformation

ABSTRACT: Devices and techniques used in recent tests to measure ultrasonic longitudinal wave velocities in granite, diabase, basalt, serpentinite, and limestone samples subjected to uniaxial compression and varying hydrostatic pressures are described (see Figs. 1 and 2 of Enclosure for diagrams of equipment used). Test results show a rapid increase in wave velocity with an increase in compression to 500 kg/cm² at a hydrostatic pressure of 1000-2000 kg/cm². This increase is attributed to decreased pore space. Additional load produces a much slower increase in wave velocity. Similarly, under higher confining pressures, velocities increase at a slower rate. At pressures above 2000 kg/cm², the velocity gradient

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L 14958-63

ACCESSION NR: AP3005588

2

falls in the range of the measurement error (3-4%). Engineer Yu. N. Kononova participated in the experimental part of this work. The article was presented by Ye. F. Savarenskiy. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of Sciences SSSR, Institute of Physics of the Earth)

SUBMITTED: 04Dec62

DATE ACQ: 06Sep63

ENCL: 02

SUB CODE: AS

NO REF Sov: 012

OTHER: 001

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BUDNIKOV, P.P.; VOLAROVICH, M.P.; POLINKOVSKAYA, A.I.; YAVITS, I.N.

Study of the character of the expansion of some types of
volcanic, hydrated glass by means of motion-picture filming.
Stroi.mat. 9 no.3:31-33 Mr '63. (MIRA 16:4)
(Perlite (Mineral)) (Motion-picture photography)

VOLAROVICH, M.P.; YASHCHENKO, A.I.; KUZHMAN, G.I.

Effect of ultrasonic waves on the rheological properties of humic substances. Koll. zhur. 25 no.4:398-401 Jl-Ag '63.

(MIRA 17:2)

1. Kalininskiy torfyanoy institut.

VOLAROVICH, M.P.; POLINKOVSKAYA, A.I.; YAVIT3, I.N.

Blistering of water-containing volcanic glasses (perlites) studied
by motion-picture photography. Koll. zhur. 25 no.5:512-514 S-0
'63. (MIRA 16:10)

1. Respublikanskiy nauchno-issledovatel'skiy institut novykh
stroitel'nykh materialov, Moskva.

VOLAROVICH, M.P.; GUTKIN, A.M.

Flow of viscoplastic disperse systems in the clearance between two coaxial tubes. Koll. zhur. 25 no.6:642-645 N-D '63. (MIRA 17:1)

1. Kalininskiy torfyanoy institut, kafedra fiziki i Moskovskiy energeticheskiy institut, kafedra fiziki.

VOLAROVICH, M.P., doktor fiz.-matem.nauk, prof.

Section of the physical chemistry, chemical technology and balneological application of peat. Torf.prom. 40 no. 250-13-163.
(CHIBA 17:3)

I. Kalininckiy torfyanoy institut.

8/020/63/149/003/015/028
B104/B186

AUTHORS: Volarovich, M. P., Balashov, D. B., Tomashevskaya, I. S.,
Pavlogradskiy, V. A.

TITLE: An investigation of the velocities of elastic waves in samples of rock at the composite action of hydraulic pressure and singleaxial compression

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 3, 1963, 583-585

TEXT: The propagation of longitudinal supersonic waves in rock samples is investigated with a pulse method. The apparatus is shown in Fig. 1. The propagation rates were measured with piezoelectric pickups at hydraulic pressures of 1, 500, 1000, 2000, and 4000 kg/cm², the single-axial pressure being changed gradually. Results: Up to a hydraulic pressure of 1000 kg/cm², v_p increases rapidly due to the closing of pores. At higher pressures v_p increases more slowly. In the single-axial compression increases up to 1000 kg/cm², v_p increases rapidly too. At higher

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S/020/63/149/003/015/02B

B104/B186

An investigation of the velocities of ...

pressures, single-axial compression has nearly no influence on the propagation rates. (Fig. 2). There are 2 figures and 1 table.

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta Akademii nauk SSSR
(Institute of Earth Physics imeni O. Yu. Shmidt of the
Academy of Sciences USSR)

PRESENTED: October 12, 1962, by P. A. Rebinder, Academician

SUBMITTED: October 11, 1962

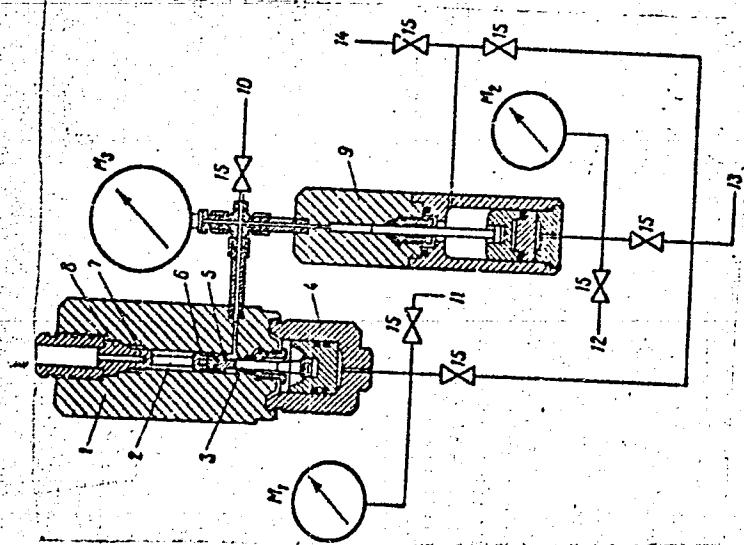
Fig. 1. Testing apparatus. Legend: (1) steel chamber; (2) sample;
(3) piston; (4) press; (5) cross piece; (6) piezoelectric pickup.

Fig. 2. Results. Legend: (1) $P = 5300 \text{ kg/cm}^2$; (2) 4000 kg/cm^2 ;
(3) 2000 kg/cm^2 ; (4) 1000 kg/cm^2 ; (5) 1 kg/cm^2 ;

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An investigation of the velocities of ...

S/020/63/149/003/015/026
B104/B186



Card 3/4

An investigation of the velocities of ...

S/020/63/149/003/015/028
B104/B186

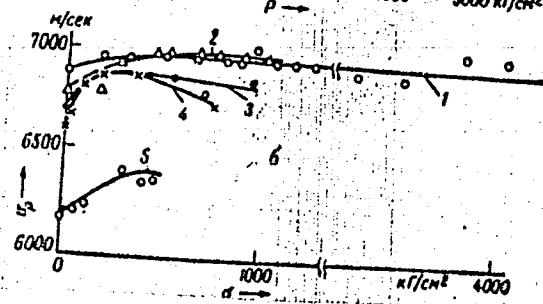
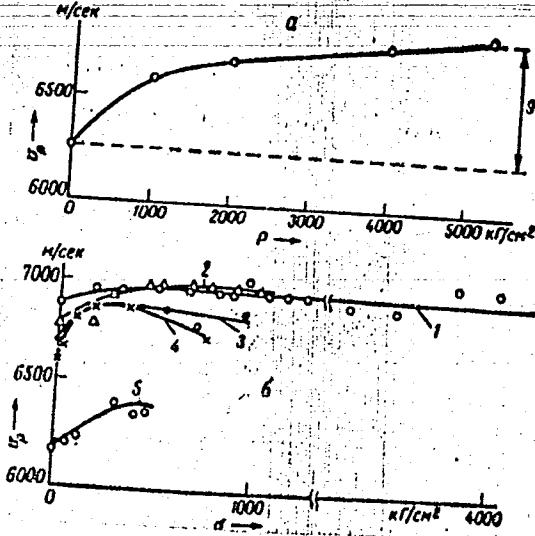


Fig. 2

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VOLAROVICH, M. P.; GUTKIN, A. M. (Moscow)

"The flow of a visco-plastic medium under combined stresses"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 1964.

VOLAROVICH, M.P.; GORAVSKIY, M.A. [Horawski, M.]; CHURAYEV, N.V.

Effect of the dispersion medium on filtration in peats. Koll.zhur.
26 no.1:22-27 Ja-F '64. (MIRA 17:4)

1. Kalininskiy torfyanoy institut i Vrotslavskaya shkola sel'skogo
khozyaystva, Pol'sha.

VOLAROVICH, M.P.; GAMAYUNOV, N.I.; DAVIDOVSKIY, P.N.

Study of the diffusion process in a porous medium (peat) by the radioactive-tracer technique. Koll.zhur. 26 no.1:139-140 Ja-F
'64. (MIRA 17:4)

1. Kalininskiy torfyanoy institut i Institut torfa, Minsk.

AFANAS'YEV, G.D.; VOLAROVICH, M.P.; BAYUK, Ye.I.; CALDIN, N.Ye.

Elastic wave velocities in ultrabasic rocks of the Monchegorsk pluton under high all-round pressure. Dokl. AN SSSR 155 no. 5: 1058-1061 Ap '64. (MIRA 17:5)

1. Institut fiziki Zemli im. O.Yu.Schmidta AN SSSR i Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geo-khimii AN SSSR. 2. Chlen-korrespondent AN SSSR (for Afanas'yev).

ACCESSION NR: AP4034538

8/0020/64/155/005/1058/1061

AUTHOR: Afanas'yev, G. D. (Corresponding member); Volarovich, M. P.; Bayuk, Ye. I.; Gal'din, N. Ye.

TITLE: Investigation of velocities of elastic waves in ultrabasic rocks of the Monchegorsk pluton under high (all-sided) pressure

SOURCE: AN SSSR. Doklady*, v. 155, no. 5, 1964, 1058-1061

TOPIC TAGS: elastic wave velocity, seismic research, transversal wave velocity, longitudinal wave velocity, rock age, geology, geophysics, high pressure, pluton, Monchegorsk pluton, tectonics

ABSTRACT: In preparation for the coming geological-geophysical (deep seismic probing) of the Baltic shield, the authors have investigated the velocity of elastic waves in ultrabasic rocks of the Monchegorsk pluton located in the central part of the Kola Peninsula. The age of this rock (by the radioactive A-K method) is about 3×10^9 years. The velocity of both longitudinal and transverse waves was determined under pressures up to 4,000 kgm/cm². The velocity of the longitudinal waves averaged from 7000 to 8000 m/sec, and that of the transverse waves

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ACCESSION NR: AP4034538

about 3000 to 4000 m/sec, at the maximal applied pressures. Rocks with microcracks show the greatest increase of velocity with increased pressure. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta Akademii nauk SSSR (Institute for Physics of the Earth Academy of Sciences SSSR) Institut geologii rudny*kh mestorozhdeniy petrografii, mineralogii i geokhimii, Akademii nauk SSSR (Institute for Geology of Ore Deposits, Petrography, Mineralogy, and Geochemistry, Academy of Sciences, SSSR)

SUBMITTED: 21Jan64

DATE ACQ: 13May64

ENCL: 00

SUB CODE: ES

NO REF Sov: 011

OTHER: 000

Card 1

2/2

ACC NR: AT6032738

SOURCE CODE: UR/0000/66/000/000/0109/0114

AUTHOR: Volarovich, M. P.

ORG: none

TITLE: Use of ultrasonic pulse methods of investigating rocks at high pressures in connection with certain geophysical problems

SOURCE: AN SSSR. Institut fiziki Zemli. Geoakustika; ispol'zovaniye zvuka i ul'tra-zvuka v seismologii, seysmorazvedki gornom dele (Geoacoustics; the use of sound and ultrasound in seismology, seismic prospecting, and mining). Moscow, Izd-vo Nauka, 109-114

TOPIC TAGS: ultrasonic pulse method, elastic wave velocity, rock pressure, ~~acidic basic rocks~~, elasticity, velocity profiling, igneous rock, ~~acidic basic rocks~~, petrology, ultrasonic velocity

ABSTRACT: Composite graphs of longitudinal- and shear-wave velocities as a function of pressure up to 4000 kG/cm² for igneous rocks are presented. The initial velocities in granites are seen to vary between 4000 to 5500 m/sec, while those in gabbros vary from 6000 to 6600 m/sec. Shear-wave velocities in acidic and basic rocks stay within the limits of from 3200—3600 m/sec at atmospheric pressure and within 3600—3800 m/sec at high pressures. Thus, the velocity ranges of the acidic and basic rocks overlap. This is attributed to the different value of the Poisson's coefficient of these rocks, which is 0.12—0.18, for acidic rocks and 0.25—0.28 for

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ACC NR: AT6032738

basic rocks. Orig. art. has: 3 figures. [WA-794]

SUB CODE: 0890/SUBM DATE: 28Mar66/ ORIG REF: 018/ OTH REF: 009/

Card 2/2

L 30090-66 EWT(1) GN

ACC NR. AP6010061

SOURCE CODE: UR/0387/66/000/003/0015/0023

AUTHOR: Volarovich, M. P.; Galdin, N. Ye.; Levykin, A. I.ORG: Institute of Physics of the Earth, Academy of Sciences SSSR (Institut fiziki Zemli, Akademiya nauk SSSR)25
BTITLE: Investigation of the velocities of longitudinal waves in igneous and metamorphic rock specimens at pressures up to 20,000 kg/cm²

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 3, 1966, 15-23

TOPIC TAGS: rock, longitudinal wave, rock forming mineral

ABSTRACT: It is now obvious that in the interpretation of data of seismology and deep seismic sounding, it is necessary to know the physical properties of rocks under the thermodynamic conditions existing in the depths of the earth. Heretofore, however, measurements have been made of the velocities of elastic waves in rock specimens under pressures of only 4,000–10,000 kg/cm², which corresponds to a depth of 15–40 km. However, since much greater depths should be studied, it is interesting to investigate the physical and mechanical parameters of igneous and metamorphic rocks, primarily the velocities of longitudinal waves, at pressures above 10,000 kg/cm². The present authors describe a high-pressure press

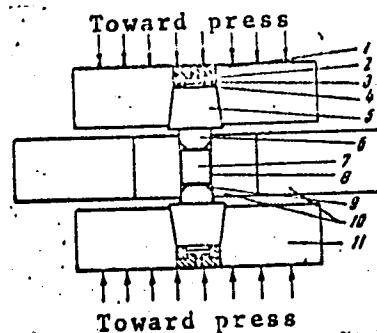
UDC: 552.1:534.092

Card 1/3

L 30090-66

ACC NR: AP6010061

used to test rock samples employing high-pressure chambers up to 14,000 and 20,000 kg/cm² (Fig. 1). An analysis of the experimental data showed that the values of the velocities of the



- 1 - Rubber lining; 2 and 3 - [unidentified];
4 - piezoceramic cells (piston type); 5 - cones;
6 - two pistons; 7 - rock sample; 8 - lead casing;
9 - shut-off rings; 10 - high-pressure chamber;
11 - support ring.

Fig. 1: Diagram of high-pressure press

longitudinal waves at high pressures (about 6,000 kg/cm²) are determined primarily by the mineral composition of the rocks, which is particularly evident in the case of rocks containing plagioclase. However, the nature of the change in velocities with pressure, especially at first, depends to a considerable degree on the structural features of the rock. A sharply defined change in the velocities in more porous rocks, i.e., granites, in the region of initial

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ACC NR: AP6010061

pressures may be explained by the closing of the pores and fissures and increased grain-contact areas. A further insignificant increase in velocity is, apparently, related to the compaction of the lattice in rocks composed of microcline. This finding agrees with the data on the measurement of longitudinal wave velocities under pressure in the [08] crystals of microcline. Orig. art. has: 7 figures.

SUB CODE: 08 / SUBM DATE: 12Sep64 / ORIG REF: 011 / OTH REF: 002

ATD PRESS: 50.12

Card 3/3 CC

PARKHOMENKO, E.I.; VOLAROVICH, M.P., prof., otd. red.

[Electric properties of rocks] Elektricheskie svoistva
gornykh porod. Moskva, Nauka, 1965. 163 p.
(MIRA 18:10)

VOLAROVICH, M.P.; GAMAYUNOV, N.T.; POLYANICHENKA, A.P.; CHURAYEV, N.I.

Radiotracer study of the mechanism of drying of dispersed materials in the process of moisture exchange with the underlying soil. Kol. zhur. 27 no.4:505-509 Jl-Ag '65. (v3n 18:12)

I. Kalininskiy terfyanoy institut. Submitted February 20, 1964.

VO ARCVICH, M.P.; TERENT'YEV, I.A.

Electron diffraction study of peat components. V-11. Sheet 27
no. 43510-512 J1-12 1965.

1. Kalininskiy torfyanoy institut. Submitted January 7, 1965.

L 116)9-66 EWT(d)/EWT(l)/EWT(m)/EWP(w)/EWA(h) EM/GW

ACC NR: AP6003246

SOURCE CODE: UR/0020/65/165/006/1287/1289

AUTHOR: Volarovich, M. P.; Levykin, A. I.

62
B

ORG: Institute of the Physics of the Earth im. O. Yu. Shmidt, Academy of Sciences
SSSR (Institut fiziki Zemli Akademii nauk SSSR)

TITLE: Measurement of longitudinal elastic waves in rock specimens at pressures up
to 40,000 kG/cm²

12,44.5'

SOURCE: AN SSSR. Doklady, v. 165, no. 6, 1965, 1287-1289

TOPIC TAGS: elastic wave propagation, high pressure chamber, ultrasonic wave
propagation, rock, seismic wave propagation

ABSTRACT: The building of a pressure chamber of a hard alloy with several re-inforcing rings made of high-strength steel has made it possible to achieve pressures up to 40,000 kG/cm² (equivalent to a crustal depth of 140 km) in Soviet pressure chambers used to study the propagation of longitudinal elastic waves in rocks. Two sizes of chambers were built (16- and 12.5-mm cylinders) and used to test cylindrical core samples 15 and 11.5 mm in diameter and 16 and 12 mm high; the cores were installed in lead casings 0.5—0.7 mm thick. A piston-type TeTS-19 piezoceramic converter with a natural frequency of 3 mc/s, used to produce and receive the ultrasonic vibrations, made possible a more precise determination of the times of the first arrivals. At this frequency the ratio of the specimen radius to the length of the longitudinal wave was 2.5 and 1.95 respectively, and

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UDC: 534-8.28

L 11649-66

ACC NR: AP6003246

the rate of the elastic wave propagation in rock specimens equaled that in a finite medium. Measurements made under high pressures were accurate within a range of 1.5 to 2.5%. All rock specimens used were fresh ultrabasic cores (peridotite, pyroxenite, and norite) taken from depths of 150 to 1000 m on the Kola Peninsula. In all specimens wave velocities increased throughout the entire range of pressures, increasing sharply in the initial stages, and flattening out at higher pressures. Above $10,000 \text{ kG/cm}^2$, the mineral composition of the specimen had the predominant effect on wave velocity, but, at lower pressures, structural-petrographic characteristics were the controlling factors. The fact that at high

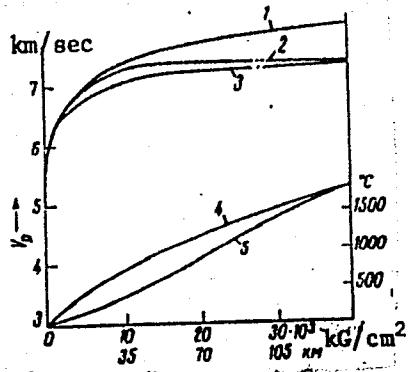


Fig. 1. Dependence of longitudinal wave velocity for the norite 470 specimen on pressure at room temperature (curve 1) and with correction for temperature (2 and 3), whose readings are indicated on curves 4 and 5 respectively

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ACC NR: AP6003246

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pressures the wave velocities were higher than those determined by seismic and deep seismic sounding methods was attributed to the failure of taking temperature effects into account in the laboratory investigations. To estimate the effect of temperature on elastic wave velocities, Birch's determinations of the temperature correction coefficients for shear waves at relatively low temperatures in gabbros and granites were used, assuming that they were very similar to those for longitudinal waves. Results of tests on a norite specimen at various temperatures and pressures, shown in Fig. 1, indicated the presence of a low-velocity layer in the upper mantle. Orig. art. has: 2 figures and 1 table. [ER]

SUB CODE: 08, 20/ SUBM DATE: 28Apr65/ ORIG REF: 006/ OTH REF: 002/
ATD PRESS: 4175

Card 3/3

VOLAROVICH, M.P.; BAYUK, Ye.I.; SALEKHLI, T.M.; PAVLOGRADSKIY, V.A.

Longitudinal wave velocities in specimens of sedimentary rocks,
saturated with kerosene and water, at high pressures. Izv. AN
SSSR. Fiz. zem. no.3:71-75 '65. (MIRA 18:7)

1. Institut fiziki Zemli AN SSSR i Institut geologii AN FzerbSSR.

VOLAROVICH, M.P.

Investigations of the physical properties of rocks at high pressures
and temperatures. Geofiz. stor. no.9:3-13 '64.

(MIRA 18:6)

1. Institut fiziki Zemli AN SSSR.

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001860420007-3

VOLAROVICH, M.P.; VAIKOV, K.S.; PAKHOMENKO, Z.I.

Specific resistance of rocks in constant and variable electric
fields. Inv. AN SSSR Fiz. ser. no. 5(5)-56 '65.

I. Institut fiziki Zemli AN SSSR.

(MIRA 1816)

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001860420007-3"

VOLAROVICH, M.P.; DAVIELOVSKIY, P.N.; GAMAYUKOV, N.I.

Effect of the moisture content and structure on the mechanism
of heat and moisture transfer in peat. Koll. zhur. 27 no.2:
167-171. Mr.-Ap '65. (MIRA 18:6)

1. Kalininskiy torfyanoy institut i Vsesoyuznyy nauchno-
issledovatel'skiy institut torfa, Minsk.

L 2844-66 EWT(1)/EWA(h)

GW

UR/0020/65/163/005/1131/1133

ACCESSION NR: AP5021277

45

39

B

AUTHORS: Volarovich, M. P.; Bayuk, Ye. I.; Salekhli, T. M.

41.55

TITLE: The velocity of ultrasonic longitudinal waves at high pressures in oil
and gas reservoir rocks of Azerbaijan

SOURCE: AN SSSR. Doklady, v. 163, no. 5, 1965, 1131-1133

TOPIC TAGS: ultrasonic wave, seismic wave, rock, high pressure/ IKL 5 radioelectric device

ABSTRACT: Studies on wave velocities were made on rocks in the Caspian lowland and the Baku Archipelago. The rocks were tested at pressures up to 4000 kg/cm². An IKL-5 radioelectric device was used for measuring wave velocities, and a lead zirconate and tantalate unit with natural frequency of 500 kilocycles was used in both transmitter and receiver. The sedimentary rocks were cylindrical cores, 3 cm in diameter and 3-15 cm long, taken from depths ranging from 100 to 3500 m. Tests were made on clay, siltstone, sandstone, and limestone. All pertinent properties of the rocks were measured. Experiments showed a sharp increase in velocity with pressure, with the greatest increase (up to 200%) being observed in very porous sand and clay. Change in limestone proved to be less, generally 15-45%.

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L 2844-66

ACCESSION NR: AP5021277

Saturation with kerosene increased velocity. Because of lower penetration, water did not increase velocity as much as kerosene. Where moisture caused swelling of the rock, the velocity decreased rather than increased. It is concluded that if the density and other reservoir properties of a rock have been measured, wave velocities may be predicted for various depths and water contents. The work of the authors confirms the fact that the velocity of less dense rocks changes more strongly with pressure than the velocity in denser rocks. Orig. art. has: 2 figures.

44,55

ASSOCIATION: Institut fiziki Zemli, Akademii nauk SSSR (Institute of Physics of the Earth), Academy of Sciences SSSR; Institut geologii, Akademii nauk AzerbSSR (Institute of Geology, Academy of Sciences AzerbSSR) 44,55

SUBMITTED: 25Nov64

ENGL: 00

SUB CODE: ES

NO REF SOV: 007

OTHER: 001

BVK
Card 2/2

VOLAROVICH, M.P.; GAMAYUNOV, N.I.; DAVIDOVSKIY, P.N.

Gamma-spectroscopic kinetic study of the heat and moisture conductivity of disperse materials. Koll. zhur. 27 no.1:3-7 Ja-F
'65. (MIRA 18:3)

1. Kalininskiy torfyanoy institut i Vsesoyuznyy nauchno-
issledovatel'skiy institut torfa, Monsk.

VOLAROVICH, M.P.; BAYUK, Ye.I.; GALDIN, N.Ye.

Effect of high pressure on the elastic properties of rock samples
collected along the outline of the area of deep seismic sounding
in northern Karelia. Izv. AN SSSR. Fiz. zem. no.1:109-115 '65.

(MIRA 18:5)

1. Institut fiziki Zemli AN SSSR.

VOLAROVICH, M.P.; SOROLEV, G.A.

Use of the piezoelectric effect of rocks for underground studies of
piezoelectric bodies. Dokl. AN SSSR 162 no. 3:536-538 My '65.
(MIRA 1815)

I. Institut fiziki Zemli im. O.Yu. Shmidta AN SSSR. Submitted
November 17, 1964.

VORAROVICH, M.P.; LIGHTVAN, I.I.; CHURAYEV, N.V.

Methods of controlling the structural and rheological properties
of semisolid peat. Koll. zhurn. 25 no.3:286-290 My-Je '63.

(MIRA 17:10)

1. Kalininskij torfyanoy institut.

VOLAROVICH, M.P.; TROPIN, V.P.

Electron microscopic investigations of microflora in various
forms of peat. Trudy Kal. torf. inst. no.13:5-19 '63.
(MIRA 17:12)

VOLAROVICH, M.P.; MINKOV, B.Ya.; RODE, L.G.; SYSOYEV, A.A.; Sov. Sci., N.Y.

Developing field instruments for the technological control of the quality of milled peat using nuclear studies. Trudy Nauch. torf. inst. no.13:39-50 '63. (CIA 17.12)

VOLAROVICH, N.P.; KOVALEVSKY, Y.E.; KULAGIN, G.I.

Studying the elastic properties of peat by the pulse ultrasonic method. Trudy Kai. terf. nauch. no.19:61-58 163.

(MIRA 17:12)

NIKOLAYEV, Boris Aleksandrovich; REBINDER, V.A., akademik,
retsenzent; VOLAROVICH, M.P., prof., retsenzent; NIKONOV,
G.S., prof., retsenzent; GRYUNER, V.S., prof.,
retsenzent; SHVETSOV, V.G., red.

[Measurement of the structural and mechanical properties
of food products] Izmerenie strukturno-mekhanicheskikh
svoistv pishchevykh produktov. Moskva, Ekonomika, 1964.
222 p. (MIRA 18:3)

VOLAROVICH, M.P.; AVDEYEV, N.Ya.

Use of an electronic computer in the dispersion analysis
of polydisperse systems. Koll. zhur. 26 no.5:647-648 S-0 '64.
(MIRA 17:10)

1. Rostovskiy pedagogicheskij institut.

AVDEYEV, Nikolay Yakovlevich; VOLAKOVICH, M.P., doktor fiz.-matem. nauk, prof., red. BAGROV, A.A., kand. tekhn. nauk, dots., spets. red.

[Analytical method of calculation in sedimentometric dispersion analysis] Ob analiticheskoy metode rascheta sedimentometricheskogo dispersionnogo analiza. Rostov-na-Donu, Izd-vo Rostovskogo univ., 1964. 201 p.
(NIRA 18:1)

RZHEVSKIY, Vladimir Vasil'yevich; NOVIK, Gotfrid Yanovich;
VOLAROVICH, M.P., doktor fiz.-matem.nauk, otv. red.

[Principles of rock physics] Osnovy fiziki gornykh porod.
Moskva, Nauka, 1964. 206 p. (MIRA 17:12)

VOLAROVICH, M.P.; BAYUK, Ye.I.; ZHDANOV, A.A.; TOMASHEVSKAYA, I.S.

Study of the elastic properties of rocks of the Kola Peninsula under hydrostatic pressure up to 7900 kg./cm². Izv. AN SSSR . Ser. geofiz. no.8:1178-1184 Ag '64 (MIRA 17:8)

1. Institut fiziki Zemli AN SSSR.

VOLAROVICH, M.P.; TROPIN, V.P.

Studying peat microflora by electron microscopy. Mikrobiologiya 32 no.2:281-287 Mr-Ap '63. (MTPA 17:9)

1. Kalininskiy torfyanoy institut.

VOLAROVICH, M.P.; KUZHMAN, G.I.; YASHCHENKO, A.I.

Anomalous velocity of propagation of ultrasonic waves in
peat of 80-90% moisture content. Koll. zhur. 26 no.3:392-393
(MIRA 17:9)
My-Je '64

1. Kalinskiy torfyanoy institut.

VOLAROVICH, M.P.; SHCHUKIN, A.I.

Use of the nuclear magnetic resonance method for determining
the moisture of peat. Koll. zhur. 27 no. 3:474-475 My-Je '65.
(MIRA 18:12)

1. Smolenskiy filial Nauchno-issledovatel'skogo instituta
teploenergeticheskogo priborostroyeniya. Submitted Nov. 12,
1964.

VOLATSICH, Mikola

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746
.V8

VOLATSICH, Mikola

Belaruskaya narodnaye tkatstva i z'nishchen'ye yaho bal'shavikami
(The Belorussian weaving industry and its destruction by the Bol-
sheviks) Myumkhen, 1955. 199 p. (Dor'ledy y Mataryyal. Seryya 2.
(ratatarnyya vyd.) nr. 34) At head of title: Institut po Izucheniyu
Istori i Kul'tury SSSR. Summaries in German and English. Includes
bibliographies.

VOLAVKA, J.; NEUMANN, J.; Statisticka spoluprace BASCH, M.

Characteristics of the course of the production of acral vasoconstrictor cutaneous reflexes following deep inspiration. Activ. nerv. sup. 4 no.2:168-169 '62.

1. VLU Karlovy Vary, PL Horni Berkovice.

(REFLEX CONDITIONED) (RESPIRATION physiol)
(VASOMOTOR SYSTEM physiol) (SKIN blood supply)

VOLAVKA, J.; NEUMANN, J.; Statisticka spoluprace BASCH, M.

Analysis of the anamnesis and some features of the personality of
patients with peptic ulcer. Activ. nerv. sup. 4 nc.2:169-170 '62.

1. VLU Karlovy Vary, PL Horni Berkovice.

(PEPTIC ULCER physchol) (PERSONALITY)

CZECHOSLOVAKIA

VOLAVKA, J., and BREZNY, I. [affiliation not given].

"International EEG Terminology"

Prague, Ceskoslovenska Psychiatrie, Vol LIX, No 3, June 63, pp 187-190.

Abstract: A vocabulary of EEG terms in Czech, Slovak, English, French, and German, including explanatory notes.

1/1

VOLKMER, J.

RING changes in stories following p. 7 and p. carbon disulphide
,disorderly, active, per, cu., (item 6 no. 3) P-271 14.

J. , especially pointed, point selection.

VOLAVKA, J.; NEUMANN, J.

Peptic ulcer and the CNS, Some modern viewpoints. Activ.
nerv. sup. 5 no.4:412-423 '63.

1. Vojensky lazensky ustav, Karlovy Vary; a Psychiatricka
lecebna, Hor. Berkovice.

X

L 14878-66

ACC NR: AP6008351

SOURCE CODE: CZ/0079/65/007/001/0057/0060

AUTHOR: Volavka, J.

41

ORG: Psychiatric Research Institute, Prague (Vyzkumny ustav psychiatricky)

B

TITLE: New recording system for clinical and electroencephalographical data

SOURCE: Activitas nervosa superior, v. 7, no. 1, 1965, 57-60

TOPIC TAGS: EEG, data processing system, punched card, coding

ABSTRACT: Standard 90-column punch card system (Aritma) was used. The system provides recording of data of any kind in a form suitable for automatic processing. The system of coding is discussed. The system provides a suitable method for the standardization of clinical documentation.

Orig. art. has: 1 figure and 1 table. [JPRS]

SUB CODE: 09, 06 / SUBM DATE: 03Jul64 / ORIG REF: 002 / OTH REF: 002

Card 1/1 *2*

CZECHOSLOVAKIA

ROUBICEK, J.; VOLAVKA, J.; MATOUSEK, M.; Psychiatric Research Institute (Vyzkumny Ustav Psychiatricky), Prague.

"Electroencephalography in Normal Population. I. (Clinical Findings and EEG). "

Prague, Ceskoslovenska Psychiatrie, Vol 63, No 1, Feb 67, pp 14-19

Abstract /Authors' English summary modified/: A sample of normal population of 109 people showed frequent presence of factors which could cause organic damage of the brain. 16 people suffered a head trauma with a loss of consciousness; in 4 of them the loss of consciousness lasted over 60 minutes. A further 9 people suffered a head trauma without loss of consciousness. 5 of the people were treated in hospitals for encephalitis or meningitis. Quite frequent was the occurrence of epilepsy, migraines, or mental disorders in relatives. The authors believe that the occurrence of EEG abnormalities in healthy people is due to the fact that those considered to be healthy suffered some minor disturbances in their past, and these influence the EEG findings in otherwise healthy people. Thorough investigation of all healthy people who show abnormal EEG records must be made before accotting an EEG recording.

KRIZEK,J.; VOLAVKA,J.; LEDEREROVA,E.; NEUMANN,J.

Alternating awareness of sexual identification. Cesk. Psychiat.
10 no.2:119-121 Ap'64

1. Psychiatricka lecebna, Horni Berkovice.

*

CZECHOSLOVAKIA

MATOUSEK, M.; ROUBICEK, J.; VOLAVKA, J.: Psychiatric Research Institute (Vyzkumny Ustav Psychiatricky), Prague - Bohmice.

"Quantitative Electroencephalography and Psychopharmacology."

Prague, Activitas Nervosa Superior, Vol 8, No 4, Nov 66, pp
451 - 452

Abstract: Recordings of the amounts of slow activity relative to the basic alpha rhythm are made and the ratio of activity in the alpha and theta bands is calculated. When the EEG changes are evaluated in this manner the dispersion in the data obtained for a given patient is reduced. This does not help when the patient, because of the administration of certain drugs, cannot keep awake, and falls asleep. The use of the ratio between the activities of the alpha and theta bands in the evaluation of the success of certain treatments is discussed. Changes in the EEG persisting after withdrawal of the drugs are described. The use of the changes in the EEG results as a basis for the investigation of certain conditions of a patient is discussed. Reduction in the changes of the EEG in patients who were successfully treated by amino oxidase inhibitors is described. No references. Submitted at the 6th

1/1 Annual Psychopharmacological Meeting at Jesenik 18-22 Jan 66.

PAULICEK, R.; PAVOLKO, O.; VOLAVKA, L.; MARTINAK, V.

Technology of founding of locomotive wheel disks and their finishing.
Slevarenstvi 10 no.1:29-30 Ja '62.

1. ZIVS Martin.

PLZAK, M.; LEDEREROVA, E.; SOUCEK, K.; GROF, P.; VOLAVKA, V.; POKORNÝ, R.;
NEUMANN, J.; BREZINOVA, V.

Combined Tofranil-Pyrifer therapy of endogenous depression. Activ.
nerv. sup. 4 no.2:226 '62.

1. Psychiatricka klinika fakulty všeobecného lekarství Karlovy uni-
versity v Praze, Psychiatricka lečebna v Hornich Berkovicích.

(IMIPRAMINE ther) (PYROGENS ther)
(DEPRESSION ther)

VOLAVKOVÁ, Hana

Zidovské město pražské. (Praha) Pražské nakladatelství V. Polacká, 1947.
149 p. (Zmizela Praha, 3) (The Jewish Town in Prague. illus.) MiU

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 6 June 1956,
Uncl.

"APPROVED FOR RELEASE: 03/14/2001

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APPROVED FOR RELEASE: 03/14/2001

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